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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/399,412	09/20/1999	MICHAEL E. RING	CRD-99304	2234

7590 05/07/2002

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EXAMINER

BROADHEAD, BRIAN J

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 05/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/399,412	Applicant(s) RING, MICHAEL E.	
	Examiner Brian J. Broadhead	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 3, 5, 6, 7, 8, 11, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al., 5605387, in view of Fourie, 4671576.

As per claims 1 and 11, Cook et al. discloses preprogramming information into a computer on line 47, on column 2; determining the speed of the train on line 43, on column 2; communicating a speed signal to a computer on the locomotive on line 8, on column 4; determining in the computer a pressure that can be applied to the brake cylinders that will maintain maximum adhesion between the wheels and the rail surface on lines 40-47, on column 4; communicating the pressure signal to the brake cylinders on lines 65-67, on column 4; and maintaining maximum pressure on the brake cylinders to stop the train in the shortest distance on lines 1-3, on column 5. Cook et al. does not disclose the pre-selected information includes velocity dependence of wheel to rail adhesion. Fourie teaches of pre-selected information including velocity dependence of wheel to rail adhesion on lines 14-25, on column 6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the adhesion information of Fourie in the invention of Cook et al. because knowing the adhesion

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characteristics help to calculate a limit to the brake demand signal to prevent unwanted slip.

As per claim 2, Cook et al. discloses providing feedback to the computer on line 15, on column 2.

As per claim 3, Cook et al. does individually control each truck (axle) of the train so it is inherent that the invention knows how many trucks there are. This is equivalent to knowing the length for determining how to distribute braking power.

As per claims 5 and 6, Cook et al. discloses programming the weight and weight of each car and using it to calculate brake pressure for the shortest stop distance on lines 40-52, on column 4.

As per claims 7 and 8, Cook et al. discloses the speed and pressure signals are electrical signals on lines 63-65, on column 3, and lines 65-67, on column 4.

As per claims 16 and 17, Cook et al. discloses speed sensing means on the locomotive and freight cars on lines 60-61, on column 3.

1. Claims 9, 10, 12, 13, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al., 5605387, and Fourie, 4671576, in view of Kull, 5681015.

2. Cook et al. and Fourie disclose all the limitations as set forth above. Cook et al. and Fourie do not explicitly disclose transmitting the control signals over wires or by radio communication. Kull teaches of using both wire and radio communication on lines 19-22, on column 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the wires or radio communication of Kull in the

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invention of Cook et al. and Fourie because it prevents the delay associated with pneumatic signals.

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al., 5605387, and Fourie, in view of Matsuoka, 5544057.

Cook et al. and Fourie disclose all the limitations as set forth above. Cook et al. and Fourie do not disclose means for determining the weight of the train. Matsuoka teaches of determining the weight of train in the abstract. It would have been obvious to use the weight detection of Matsuoka in the invention of Cook et al. and Fourie because such modification would provide the load present that will cause braking torque's to vary.

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. 5605387, and Fourie, in view of Roselli et al., 5718487.

Cook et al. and Fourie disclose all the limitations as set forth above. Cook et al. and Fourie do not disclose input means in the locomotive and the input means being a keyboard. Roselli et al. discloses input means in the locomotive and the input means being a keyboard on lines 33-35, on column 4. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the keyboard of Roselli et al. in the invention of Cook et al. and Fourie to provide a way to adjust variable related to train operation.

Response to Arguments

1. Applicant's arguments filed 3-4-02 have been fully considered but they are not persuasive. The recitation of a freight locomotive does not make the claims patentable

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over the prior art. The claims don't recite any type of difference between a freight train and a mag-lev train that is touched down and in a braking state except that a normal train is on rails but rails are not disclosed in Cook. But balancing braking is going to work the same way on rails or not on rails. One of ordinary skill in the art at the time the invention was made would know that a brake system used in a train can be used in a freight train or car. The variables for such things as wheel adhesion would be different between a road and rail, but the systems would still operate the same. Once the mag-lev touches down it behaves as a train on rails would behave and still needs balanced braking.

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Broadhead whose telephone number is 703-308-9033. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William A. Cuchlinski can be reached on 703-308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

BJB
May 5, 2002

James D. Jones
JAMES D. JONES
PATENT COUNSEL